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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,681	02/11/2004	Rudolf Faust	ULI-001	3827

27774 7590 03/14/2005

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EXAMINER

CHOI, LING SIU

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/776,681	Applicant(s) FAUST ET AL.	
	Examiner Ling-Siu Choi	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.  
     4a) Of the above claim(s) 1-7 and 19-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Election/Restriction***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-7, drawn to an end-capped polymer, classified in class 526, subclass 348.
  - II. Claims 8-18, drawn to a copolymer, classified in class 526, subclass 328.
  - III. Claims 19-30, drawn to a method to prepare the end-capped polymer, classified in class 526, subclass 227.
  - IV. Claims 31-34, drawn to a block copolymer of isobutylene and hydroxyethyl methacrylate, classified in class 526, subclass 348.7.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions relate to an end-capped polymer, a copolymer, and a block copolymer of isobutylene and hydroxyethyl methacrylate.

Inventions II, III, and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions relate to a copolymer, a process to prepare an end-capped polymer, and a

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block copolymer of isobutylene and hydroxyethyl methacrylate.

Inventions III and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such a process to modify the end group instead of using chain transfer agent .

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Ms Danielle L. Herritt on January 7, 2005, a provisional election was made with traverse to prosecute the invention of Group I, claims 8-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-7 and 19-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37

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CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Objections***

6. Claims 8-18 are objected to because of the following informalities: (a) claim 8, line 6, "moitey" is suggested to be changed to --moiety--; (b) claim 8, line 7, "and" is suggested to be changed to --or--; and (c) claim 15, line 2, "methacylate" is suggested to be changed to --methacrylate--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

**The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

8. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Is radial-shaped copolymer the same as star-branched copolymer? If it is the case, the polymer which meets the requirement of claim 8 on which it depends will not be a star-branched copolymer because R and R<sub>1</sub> are defined as hydrocarbyl groups having 1-20 carbons.

***Allowable Subject Matter***

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9. Claims 8-18 are allowable over the closest references: Quirk et al. [Polymer Preprints, **37(2)**, 402-403, 1996].

The present invention relates to a copolymer comprising

A	<b>a first polymer block</b> that comprises a plurality of cationically polymerizable monomers
B	<b>a second polymer block</b> that comprises a plurality of anionically polymerizable monomers
C	<b>a linking moiety</b> linking the first polymer block and the second polymer block wherein the linking moiety is selected from $-(p-\phi)-C(R_1)(\phi)-$ or $-(m-\phi)-C(R_1)(\phi)-$ with $R_1$ being a branched, unbranched, or cyclic alkyl group or an aryl group, containing from 1 to 20 carbons

(summary of claim 8)

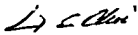
Quirk et al. disclose a diblock polymer obtained by (a) contacting 1,3-bis(1-phenylethylene)benzene with poly(styryl)lithium and poly(butadienyl)lithium and (b) quenching with MeOH (page 402). Quirk et al. further disclose a star-branched polymer obtained by (i) contacting 1,3-bis(1-phenylethylene)benzene with poly(styryl)lithium and poly(butadienyl)lithium and then (ii) contacting the resulting product with additional styrene, butadiene, or t-butyl methacrylate monomer (pages 402-403). However, Quirk et al. do not teach or fairly suggest a copolymer or star-branched copolymer comprising a linking moiety having  $R$  and/or  $R_1$  being branched, unbranched, or cyclic alkyl group or an aryl group, containing from 1-20 carbons.

### **Conclusion**

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



LING-SUI CHOI  
PRIMARY EXAMINER

March 4, 2005